

University of Chicago Law School

Chicago Unbound

Journal Articles

Faculty Scholarship

1984

Efficient Markets and Puzzling Intermediaries

Saul Levmore

Follow this and additional works at: https://chicagounbound.uchicago.edu/journal_articles



Part of the [Law Commons](#)

Recommended Citation

Saul Levmore, "Efficient Markets and Puzzling Intermediaries," 70 Virginia Law Review 645 (1984).

This Article is brought to you for free and open access by the Faculty Scholarship at Chicago Unbound. It has been accepted for inclusion in Journal Articles by an authorized administrator of Chicago Unbound. For more information, please contact unbound@law.uchicago.edu.

EFFICIENT MARKETS AND PUZZLING INTERMEDIARIES

*Saul Levmore**

MOST inquiries into market structures and the effects of legal rules on market participants and outcomes are based on economic and behavioral models. The simplest of these models assumes that information is perfectly available to and understood by all concerned actors. Information, however, can rarely be taken for granted in real markets, and its treatment is therefore a critical stepping-stone in positive and normative arguments that depend upon the presence or absence of well-functioning markets. In their broad and provocative article, Professors Gilson and Kraakman remind us quite properly that markets are, at the very least, information exchanges.¹ They further point out that the capital market, like other markets, is more “efficient”²—or is a more accurate reflection of itself³—because actors are better able to respond to information about one another and about their past and future arrangements. Most important, Gilson and Kraakman correct any misapprehension concerning the nature of the interaction between the capital and information markets: inasmuch as the costs of information production are critical to the capital markets, the interaction is continuous.

In Part I of this response I examine the nature of information in capital and other markets and the extent to which descriptions of the informational underpinnings of markets assist in understanding legal rules and public policies that affect the quantity and

*Assistant Professor of Law, University of Virginia. I am grateful for conversations with Michael Dooley, Hideki Kanda, Ed Kitch, Roberta Romano, and Robert Scott.

¹ Gilson & Kraakman, *The Mechanisms of Market Efficiency*, 70 Va. L. Rev. 549 (1984).

² “Efficient” here is used only in its corporate finance sense. The truth, nature, and implications of the “efficient capital market hypothesis”—described and discussed at length in Gilson & Kraakman, *supra* note 1—is, of course, a preoccupation of the corporate finance literature. It is curious that so little attention has been paid to more familiar forms of efficiency. One might wonder whether capital market trading is executed quickly and inexpensively, whether the locations and hours of the market are Pareto optimal, and so forth. I suggest, *infra text* accompanying notes 39-41, that such attention is merited.

³ This characterization is hardly Gilson & Kraakman’s. See *infra text* accompanying notes 12-13.

quality of information exchanges. In Part II I focus on some of the specific substantive applications suggested by Gilson and Kraakman and especially on the information-providing role of the underwriter of a capital market issue. I also explore in Part II the corporate finance puzzle of persistent and substantial "superreturns" available to investors in new issues,⁴ and I compare the underwriter's relationships with issuers and investors to relationships involving other "market intermediaries," using, as do Gilson and Kraakman, the specific example of real estate brokers and their clients.⁵

I admit at the outset that mine is not a very positive contribution. Prevailing arrangements are so inexplicable that it is tempting to explain puzzles by reference to the lack of entrepreneurial imagination evident in markets for goods about which little is known (metaphorically called "black boxes"). I suggest that research effort might profitably be redirected from measuring the self-reflectiveness of capital markets toward the study and formulation of incentive systems for market intermediaries.

I must apologize for focusing on but two subjects in this response. Although much of Gilson and Kraakman's discussion covers familiar terrain, I do hope that others will scrutinize their interesting approach to insider trading rules.⁶ On the other hand, I am unable even to feign disagreement with their excellent treatment of mandatory disclosure rules⁷ and the "efficiency paradox."⁸

⁴ Gilson & Kraakman, *supra* note 1, at 621 n.197.

⁵ This exploration is really an exercise concerning relational contracts and incentive systems. It is intended to contribute to an understanding of the interaction between the nature of information acquisitions and contract design.

⁶ Gilson & Kraakman, *supra* note 1, at 627-43. I must add that I would have been more comfortable with an analysis of the three (rather than two) markets that interact in ways that are critical to judicial and legislative intervention: the capital market, the information market, and the "real" market for goods as it is affected by the first two. See generally Levmore, *Securities and Secrets: Insider Trading and the Law of Contracts*, 68 Va. L. Rev. 117 (1982).

⁷ Gilson & Kraakman, *supra* note 1, at 635-43.

⁸ *Id.* at 622-27.

I. OBSERVATIONS ON INFORMATION AND THE EFFICIENT MARKET HYPOTHESIS

Gilson and Kraakman's conclusion "that information costs critically determine market efficiency"⁹ follows inexorably from an appreciation of the meaning and nature of market efficiency. A market allocates resources both by matching those buyers and sellers most inclined to transact (within the constraints inherent in the bidders' wealth) and by broadcasting signals, in the form of prices, to potential participants. The more effectively the market absorbs and reflects all information presently ascertainable, the more reliable and efficient are these signals.

Assuming that no exogenous events affect the inclinations or capacities of producers, consumers, and other market participants, a perfectly efficient market will reflect and relay at any given time the most accurate signal, or price. And because the efficient market assimilates all known information on all goods, each day's market-clearing price is the best indicator of future prices. As unanticipated factors arise (e.g., new production figures, competitors, or even wars) these market-clearing prices (and market signals) may change, but at any particular time they are truer than any other available signal, given the information—and the costliness of more information—in the market. In other words, absent the reality of an efficient market, energetic players would invest in discovering information and transact in the present-day market with an expectation of profit when the market price rises (or falls) in reaction to the spread of this new information.¹⁰ If information is relatively inexpensive to obtain, then these profit-making players will move the market quite close to its "true," or self-revealing, value. Consequently, as Gilson and Kraakman point out,¹¹ the cost of information largely determines the efficiency, or quickness, of the market.

As a means of exploring the notion that an efficient, well-informed market is really a "self-reflector" (i.e., a reliable indicator of its own future)—and is not necessarily "correct" or useful to players and policymakers¹²—consider the market for a "black box"

⁹ *Id.* at 612.

¹⁰ Investors, of course, may be abler than finance theorists to overcome prediction problems and, therefore, will move market prices in the correct direction. See *infra* note 11.

¹¹ Gilson & Kraakman, *supra* note 1, at 609-26.

¹² To be sure, policymakers concerned with the regulation of the capital markets them-

with contents unknown to buyer and seller. Bidders know only that the property is worth something between zero and a very large value. Presumably, an auction will yield a market price, which may be the best indicator of future market prices. No more information is forthcoming, and thus the market is efficient in the sense that the price reflects everything known about the property.¹³

The "black box" scenario underscores the problem inherent in the self-reflective nature of markets—a problem familiar to anyone who has attempted to value a closely-held enterprise.¹⁴ The most useful question, then, to ask about a market is not whether it is quickly self-reflective in a mechanical sense. Rather, the more revealing (and traditional) inquiry is whether we have reason to believe that the sum of atomistic information-acquiring efforts does not produce socially "optimal" results (i.e., does not equal the sum of demands for such information). In a variety of markets there is indeed reason to think that information production is, in this sense, suboptimal. Buyers who discover information about price differentials often are unable to profit from their finds, because short-term resale markets (for arbitraging) are expensive to establish and, most important, can be undercut by a quick price reduction on the part of the supplier whose prices had been high.¹⁵ It is

selves ought to be interested in the degree to which these markets are well informed. Presumably, we would want regulators to compare the costs of regulation, including mandated disclosure rules, with the projected benefits that will accrue from greater information.

For a discussion of the difference between self-reflection and accuracy, see L. Summers, *Do We Really Know That Financial Markets Are Efficient?* (1982) (Nat'l Bureau Econ. Research Working Paper No. 994) (statistical tests used to examine market efficiency have very low power; valuations can differ substantially from rational expectations of value of cash flows without leaving discernible traces in patterns of measurable returns; and speculators unlikely to do better than financial economists who carry out these weak tests).

¹³ A market that is "efficient" in this sense is not useful as a signal to producers, consumers, or other interested parties. The market will reveal, if anything, the risk attitudes of some participants through their willingness to bid virtually blindly.

¹⁴ To be sure, the problems confronted in valuing a business can be quite different from those encountered in predicting the price of a black box. In the business context, the sticking point is circularity. Appraisers may try, for example, to combine the estimates they obtain from considering the firm's assets, discounted earnings, and recent market prices, but assets are only worth what they can earn. The problem is thus not so much one of missing information as of extrapolation from the available information to total value.

¹⁵ For example, a shopper who notices a significant price differential between two local supermarkets selling a given product may attempt to profit from the disparity by buying large quantities from the cheaper seller and attempting to lure away customers who patronize the higher seller. But as a practical matter, the likelihood of swift undercutting by the higher seller, coupled with the expense of this endeavor, virtually forecloses arbitrage activ-

also likely that substantial freerider problems will exist among those who might seek information. Moreover, it is difficult to organize joint ventures that will successfully internalize the costs and processes of acquiring information, for there is no easy way to exclude non-members or to insure that all users of information are also contributors.¹⁶

In contrast, most capital markets, such as the great stock and bond exchanges, offer an ideal environment for arbitrageurs. Any morsel of information relevant to a corporation's worth is generally worth discovering, because bulk purchase and storage of securities—until enough buyers recognize their “true” value—is a simple matter.¹⁷ As a result, there is good reason to expect an “optimal” level of information-acquiring effort by profit seekers in most capital markets. To call these markets efficient, however, is to say less about the desirability of their signals than about the way the search for information yields a self-reflective market. Again, bidders for a black box will naturally expend optimal information gathering efforts (none) and will in course settle on a high bid that could be called the true value of the unopened box.

Having sketched a framework for viewing markets and information, I now focus on the tools of policymakers. Gilson and Kraakman imply that if underlying information is costly to acquire, thereby rendering the market in question relatively inefficient, then legal rulemakers are faced with a number of policy implications. My own view is somewhat more skeptical. First, the efficiency of a market matters to the law only occasionally—and then only in small areas—unless there are radical changes in the law's posture toward “unwise” bargains and the like. Second, legal inter-

ity in this setting.

¹⁶ The supermarket price differential is one illustration of a market with suboptimal information generation. It is, of course, difficult to design empirical studies that would confirm or disprove such relativistic statements. Observers who readily presume the vitality of market mechanisms are apt to insist that price variations are temporary or minor compared to the cost of arbitrage or of information dissemination. Skeptics can afford to notice and be puzzled by numerous everyday examples of price variation among close competitors, by the intuitively plausible freerider problem among shoppers and informers, and by the fact that few, if any, obvious vehicles for overcoming this freerider problem—such as local newspapers (which, after all, are often supported by businesses such as supermarkets)—provide regular information on price differentials.

¹⁷ Unlike other markets, see *supra* note 15, trading and storage in the capital markets are relatively costless, regardless of the size of the purchase. Thus, the conditions for arbitrage in securities are favorable.

vention ought to be based on intuitions and conclusions regarding *structural* imperfections (e.g., freerider problems) in the information-acquiring process rather than the magnitude of information costs and the relative efficiency of the market in question.

The empirical realities of the familiar capital markets best demonstrate that the efficient market hypothesis is interesting but often irrelevant to the law. Virtually all sophisticated commentators agree that no money manager is likely to outperform the market.¹⁸ They also agree that investment advice ought to concern portfolio characteristics—primarily a reasoned diversification of risk—and not the mind-boggling and generally counterproductive manipulations of past performances and other information carried on by chartists, fundamentalists, and others. Admittedly, there may be a few investment counselors who are genuinely talented and can outperform the rest of us; but even if such marvels exist, they must surely limit their advice to a few highly rewarding customers. As a result, the overwhelming majority of investors who look for advice about hot stocks and market timing waste their resources.

Does the law care? It is difficult to imagine even the most aggressive Securities and Exchange Commission shutting down all stock brokerage services that provide such "advice." Nor is it likely that the courts would label such services as fraudulent or would in some other way interfere with bargains involving payment for apparently worthless services. In fact, commentators now are trying to convince the courts and the practicing bar that fiduciaries ought to be allowed to invest trust fund assets in market (diversified) funds, even though fiduciaries do not manage or actively oversee such funds.¹⁹ We are, however, a long way from requiring this sort of behavior, although such changes may well follow from the reality of an efficient capital market. An important policy conclusion that derives from belief in efficient capital markets thus seems, at least at the present time, hopelessly beyond reach.²⁰

¹⁸ See Gilson & Kraakman, *supra* note 1, at 571-72.

¹⁹ Langbein & Posner, *Market Funds and Trust-Investment Law*, 1976 *Am. B. Found. Research J.* 1, 28-30.

²⁰ Nor does the efficiency of a market seem to matter much in contract law. To be sure, the law reflects a sensitivity about the existence of a *developed* market, or demonstrates a reasonable ability to substitute, when appropriate, for an aborted contractual arrangement, in its application of doctrines concerning mitigation and in its occasional insistence on spe-

On the other hand, market efficiency can be regarded as immediately relevant and profoundly important to a variety of legal rules and requirements that govern valuation.²¹ Given the occasion that has prompted this symposium, I will comment on market efficiency and valuation in the securities markets. The discussion that follows is, however, more persuasive when applied to other markets.

The legal argument in support of the utility of market efficiency centers on the notion that, in an efficient market, the market price for shares will reflect their actual value. Extrapolating from this premise, Professors Easterbrook and Fischel²² argue that shareholders of a target corporation should not be "protected" in a takeover battle by incumbent managers who may claim, despite the fact that a potential acquirer's offer promises a premium over the prevailing market price per share, that such an offer should be rejected.²³ They argue that an efficient capital market implies that shares selling on the stock exchange for \$10 are worth just that; owners who receive \$12 per share can hardly complain, and managers who attempt to prevent acquisitions at \$12 per share do harm.²⁴

A fundamental drawback to using an efficient market price to determine value is that such a price may reflect only *marginal* value—that is, the price at which an additional share will change hands. Someone attempting to value a target, however, may wish

cific performance. See generally Goetz & Scott, *The Mitigation Principle: Toward a General Theory of Contractual Obligation*, 69 Va. L. Rev. 967, 984-86 (1983). But there is little reason to think that contract law makes distinctions based upon the relative efficiency of the particular market involved. Indeed, the securities market is in many ways more regulated than are most markets (by contract and tort law), even though it is likely to be more efficient—even without regulation—than most markets.

²¹ The concept of "value" is at the core of many legal problems. See Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 Va. L. Rev. 771 (1982).

²² Easterbrook & Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 Harv. L. Rev. 1161 (1981).

²³ Rejection of a price that reflects actual value (or actual value plus a premium) is inconsistent with market efficiency, although it may be consistent with strategic behavior. See *id.* at 1182-90.

²⁴ *Id.* at 1165-68. It might similarly be suggested that the appraisal remedy in corporate law be built around or supplanted by the prices generated by an efficient capital market. Together with Professor Kanda, I am currently exploring this subject. Suffice it to say that appraisal statutes may reflect reasonable doubts about the application of the efficient market hypothesis and may also reflect other goals of corporate law.

to know not the marginal value assigned by a single shareholder to his shares, but the *total* value of the corporation or of all of its outstanding shares. This total value is the product of the total number of shares outstanding times the average value of a single share. Average value is generally higher than marginal value because all owners will not identically "appreciate" the item in question as measured by their willingness to pay (strategic behavior aside). Extrapolating to total value from marginal value thus ignores inframarginal shares that may not change hands at the market price.²⁵ Note that the failure of holders of these inframarginal shares to purchase additional shares at the "bargain" marginal price does not reflect a true valuation at or below this marginal price. Rather, these shareholders may simply prefer diversification to purchasing additional shares at the marginal price.

Market prices, then, are normally useful only for measuring the "currency" value of a share—its value in a continuing market. For example, if A owes B \$100 and A gives over two shares of X Corporation common stock selling (valued at the margin) at \$50, B's claim, transactions costs aside, has been satisfied: B can sell the shares and recover his \$100 in liquid currency. On the other hand, if A takes two shares of X Corporation from B, and X Corporation is "going private" so that its shares will not be traded, B may not be satisfied with \$100: liquid currency may not necessarily satisfy his nonmarginal tastes or duplicate his inframarginal position.

The Easterbrook-Fischel proposal may, nevertheless, be normatively sound. Yet without empirical evidence regarding the extent to which encouraging takeovers promotes innovation or otherwise increases social utility, one can be sure only that an efficient mar-

²⁵ Readers unfamiliar with this concept may wish to consider a simple labor or product market, say for this law review issue. Some buyers would pay \$50 a copy, no doubt, others \$40, and others would pay \$20, \$10, \$2, and so forth. The seller has chosen a price of \$5 that presumably maximizes profits (including, perhaps, some calculation of illegal photocopied substitutes). Buyers who would pay \$2 do not buy any, those who would pay \$5 are just attracted by the seller's pricing strategy, and those who would pay more than \$5 are quite pleased; they pay the marginal price although they would have paid more. Unless the seller can price discriminate effectively, as between libraries, practitioners, and students, every buyer will pay only \$5. Those who would have been willing to pay more are the inframarginal buyers. Note that while the issue remains in print, these inframarginal owners would gladly release their copies for a price above \$5 because they could buy substitutes at \$5. If such perfect substitutes are unavailable, however, marginal owners might not mind releasing their copies for \$5, but inframarginal owners could honestly object.

ket implies reliable *marginal* valuations and *not* reliable valuations of entire holdings. Of course, one might argue that such "total valuations" are beside the point and that any undercompensation of shareholders is an unimportant side effect so long as no misallocation of resources occurs.²⁶ But the debate²⁷ must then turn on the likelihood of such misallocation and society's attitude toward such takings. Little progress is made by attempting to solve these questions with the efficient market hypothesis, for the utility of efficient market prices for valuation problems is limited to currency measurement and does not extend to taking cases or to other settings in which a legal right not immediately transferable is at stake.

There are three responses to this objection to the utility of market prices in valuation and, it appears, three derivative paths that normative arguments may follow. First, demand for the good in question may be extremely elastic, so that its marginal price is equal to (or very close to) the average price and extrapolation is appropriate. Some evidence exists supporting the validity of this proposition for the stock market; i.e., investors may regard shares of one firm as very close substitutes for shares of another, resulting in very elastic demand for any one firm's shares.²⁸ The relative paucity of empirical work in this area, though, leaves the question unresolved.²⁹ There is really no evidence that inframarginal shares

²⁶ The efficiency-based argument is that even if some inframarginal owners value property more highly than do marginal owners, taking away these inframarginal holdings in return for compensation that is determined at the margin does not produce misallocations because there is nothing inframarginal owners can do or would have done about the undercompensation. The taking is thus like a windfall profits tax; taxpayers may wish the tax were lower and may feel it is unfair, but were they to invest all over again they might well do nothing different, for no greater windfalls are elsewhere available.

²⁷ Easterbrook & Fischel, *Corporate Control Transactions*, 91 *Yale L.J.* 698 (1982) (supporting rules that encourage even confiscatory transactions so long as all share transfers are at least at the market price), and Brudney & Chirelstein, *Fair Shares in Corporate Mergers and Takeovers*, 88 *Harv. L. Rev.* 297 (1974) (supporting rules that require explicit sharing of opportunities among controlling and minority shareholders), present the polar positions in the debate over the utility of the efficient market hypothesis in valuing dissenters' shares in takeovers.

²⁸ Scholes, *The Market for Securities: Substitution versus Price Pressure and the Effects of Information on Share Prices*, 45 *J. Bus.* 179 (1972) (data regarding secondary distributions of stock demonstrate that price discounts are not necessary to sell new issues).

²⁹ This is hardly the place to consider in any detail Scholes' sample, formulation of hypotheses, or methodology. Inasmuch as my point is not that demand is inelastic as that it may be inelastic, in which case self-reflective marginal prices help little in valuing total

are not inelastically demanded.³⁰ It seems quite likely, moreover, that disparate tastes for risk diversification (e.g., in portfolio creation), for tax advantages, and for particular management strategies tend to reduce the elasticity of demand.

In any event, even assuming the equivalence of marginal and average values, there is reason to oppose legal rules, such as those proposed by Easterbrook and Fischel, that deny owners the opportunity to extract profits from buyers who claim to place greater value on the goods in question. Easterbrook and Fischel³¹ would prevent unorganized target shareholders from strategically extracting a price commensurate with the acquirer's willingness to pay or would force target management to reveal business secrets to justify rejecting a buyout offering price above the current market level.³² Their position thus depends not only on an assumption of

shareholdings, one source of doubt (among many) should suffice: Is it not possible that some investors value shares of a firm higher than the market price, that a second group of investors—perhaps millions in number—values them at the market price (perhaps because they believe in market efficiency), and that yet a third group, consisting of perhaps fewer people, values them below the market price? Thus, a large offering of stock finds many willing buyers from the second group at the prevailing price. But this does not contradict the presence of the first group, whose members are precisely those who claim to value their shares (in a takeover) at a price higher than the marginal price. Scholes' findings, see *supra* note 28, are simply not inconsistent with concern for inframarginal shareholders.

One might wish to add to this view the possibility that a large sale, such as a secondary distribution, is a "signal" and that the entire demand curve shifts depending on how the signal, or news, is interpreted. For example, if the price remains the same, investors apparently feel that the issuer will do about as well with the newly raised capital as it has been doing with old capital. Alternatively, if the price moves up or down, investors appear to believe that the issuer either has a good idea and needs more capital for a project more profitable than the issuer's past projects, or that it is in trouble and needs the capital just to stay afloat.

³⁰ This is in contrast to evidence that many potential investors would buy at or just below the prevailing market price. See Scholes, *supra* note 28. See also Mayshar, *On Divergence of Opinion and Imperfections in Capital Markets*, 73 *Am. Econ. Rev.* 114 (1983).

³¹ See *supra* notes 22-24 and accompanying text.

³² It is difficult to evaluate the advantages to the economy of property rights in rents. See Bebchuk, *The Case for Facilitating Competing Tender Offers: A Reply and Extension*, 35 *Stan. L. Rev.* 23 (1982); Easterbrook & Fischel, *Auctions and Sunk Costs in Tender Offers*, 35 *Stan. L. Rev.* 1 (1982); Gilson, *Seeking Competitive Bids Versus Pure Passivity in Tender Offer Defense*, 35 *Stan. L. Rev.* 51 (1982). My own disinclination to accept the Easterbrook-Fischel view derives from a sense that target corporations have "secrets" that, for good reasons, are not publicized. Acquirers may guess or learn about these secrets and therefore become willing to pay more than the market price, even for marginal shares. There is no reason to be sure that the acquirer can outperform the current management, and there is every reason to think that target management may be forced to reveal secrets (in a way that harms the corporation and, perhaps, the economy as a whole) or forego innovation

superelasticity of demand for the good (shares) being valued, but also on assumptions regarding the assignment of property rights (to strategically located sellers) and the likelihood that, for good reasons, secrets are withheld from the market.

A second response to the marginal-average objection is that in a given situation inframarginal buyers may, by not showing their colors, not only fail to affect the market price but also fail to invest according to their tastes. For example, in test marketing, if a few items are for sale (but it is clear that the item will be sold shortly in great volume), buyers who place relatively high values on the good in question need not rush to reveal their true tastes; the good, like most, will soon sell just as it is valued on the margin.³³ In the context of the stock market the argument is, then, that inframarginal investors will have held back at the outset so that, having invested only at the margin along with other investors, they really lose nothing when they are closed out at marginal prices. This argument essentially comes down to the same considerations as the one preceding it. Inframarginal buyers may suffer an opportunity cost as serious as any out-of-pocket cost; assessing this cost requires, once again, a feel for these property rights and for the benefits of takeovers.

The third reaction to the marginal-average objection is pragmatic and instrumentalist: Even if there is some inelasticity of demand for a corporation's shares, there is considerable danger that shareholders who are allowed to "hold out"—that is, who refuse to sell even when the price offered exceeds their own valuation, or "reservation price"—will obstruct desirable corporate activities by preventing transactions in their quest for greater payments. I suspect that this view, which does *not* depend upon the reliability (efficiency) of market prices, will ultimately be embraced by most observers who both care (as I do) about increasing the economic pie

under the Easterbrook-Fischel rule.

³³ See *supra* notes 31-32 and accompanying text. For an interesting and elegant application of this notion, see Roe, *Bankruptcy and Debt: A New Model for Corporate Reorganization*, 83 *Colum. L. Rev.* 527 (1983). Professor Roe suggests that valuation difficulties in reorganizations be solved through the market by first offering for sale some shares of the reorganized enterprise. Because *early* purchasers will know the volume of shares that will eventually be outstanding, they will not act upon expensive inframarginal tastes; thus Roe's approach would avoid, among others, problems normally associated with extrapolation from marginal behavior. *Id.* at 577.

and argue (as I generally do not) against legal protections for minority shareholders and other actors with similar claims.³⁴

But even as a currency measurement matter,³⁵ I do not find the notion of an efficient market or the attention paid to information costs particularly useful. What are the alternatives for measuring damages or for assessing the value of other legal rights? Aside from exceptional circumstances and radical suggestions,³⁶ valuation techniques that do not rely on market prices are notoriously arbitrary. Appraisers—be they judges, juries, arbitrators, or commentators—fare poorly in attempting to fix asset values, opportunity costs, or the values of earnings streams, because these notions are themselves derivative of market prices.³⁷ Even when information costs are high and markets are poorly informed, the law is unlikely to collect better data when it searches away from the market. I am left, then, with the realization that the degree and details of market efficiency are unnecessary—both because the law is in some areas disinclined to be paternalistic in its pursuit of the implications of market efficiency and because in other areas the law should (and almost surely would) rely on market prices even if the market were thought relatively inefficient.³⁸

Nor should the degree of market efficiency dictate policies concerning government regulation of the market. A finding of market inefficiency should not decide this issue, because the decision to regulate must consider not only the benefits but also the costs of regulation. And, on the other hand, even if the market is found to be efficient, it may be so volatile (although perfectly self-reflective) that regulation will be considered a good idea if it can “stabilize” the market or encourage a parallel futures market.

In short, although descriptions of the informational underpinnings of markets are interesting, I am concerned that they misdirect our inquiries. Short of a regime in which a confident law-and-economics approach is used to interfere with consumer choices

³⁴ See Easterbrook & Fischel, *Corporate Control Transactions*, 91 *Yale L.J.* 698 (1982).

³⁵ See *supra* at 651-52.

³⁶ See Levmore, *Self-Assessed Valuation Systems for Tort and Other Law*, 68 *Va. L. Rev.* 771 (1982).

³⁷ See *supra* note 14.

³⁸ See *supra* notes 25-34 and accompanying text. In eminent domain proceedings, for example, the law would give the dispossessed property owner only the market value of his property regardless of the relative efficiency of the particular real estate market.

by policing claims of investment advisers and brokers,³⁹ our attention is better spent studying institutional realities and reforms,⁴⁰ reconsidering "private eminent domain"⁴¹ (which is generally what suggestions about the implications of the efficient capital market hypothesis are about), developing a more consistent approach to protecting property rights and personal tastes, or seeking empirical methods of clarifying the choices between these last two approaches.

II. SOME PUZZLING ASPECTS OF THE ISSUER-UNDERWRITER RELATIONSHIP

Gilson and Kraakman's discussion of the role of new-issue underwriters⁴² is admirable—especially as it is one of those rare theories that is testable! The now familiar puzzle⁴³ involves the underpricing of new issues so as to shortchange issuers, offer windfalls to investors, generate extra profits for underwriters, or somehow combine these possibilities. Let us assume for the sake of discussion that the risk-adjusted average initial performance of newly issued common stock is indeed very positive (11.4%) and that the aftermarket is then efficient.⁴⁴ Gilson and Kraakman suggest that new issues are offered at a discount in order to build up, *ex post*, the reputation of underwriters, a hypothesis that leads to certain predictions regarding the behavior of participants in the capital markets. First, one would predict that issues offered by mature underwriters would not be underpriced, because such underwriters must surely cash in on their developed reputations by charging

³⁹ See *supra* text preceding note 19.

⁴⁰ See *supra* note 2.

⁴¹ See Levmore, *supra* note 6.

⁴² Gilson & Kraakman, *supra* note 1, at 613-21.

⁴³ *Id.* at 621 n.197.

⁴⁴ Again, "efficient" means only that the market is self-reflective in the style of the corporate finance literature, not that it is optimally operated. See *supra* note 2. An efficient stock market, optimally operated, would be one that a decision maker, able to overcome freerider and other problems of innovation and experimentation and to internalize costs and benefits, could not improve with new auction methods, trading rules, or other means.

The term "aftermarket" refers to trading done on the exchanges or over the counter, after an offering is initially distributed. See Ibbotson, *Price Performance of Common Stock New Issues*, 2 *J. Fin. Econ.* 235 (1975) (finding *risk-adjusted* positive initial performance along with aftermarket efficiency (i.e., no further abnormal performance) of newly issued common stocks). See also J. Blum, *An Analysis of the Price Behavior of Initial Common Stock Offerings* (1971) (unpublished Mich. St. PhD dissertation).

supranormal prices. Second, because broker-intermediaries presumably have informational advantages similar to those attributed to underwriters, one might expect stockbrokers also to sell shares at a discount in order to build *their* reputations. Neither of these predictions, though, seems plausible. Why would other market participants allow underwriters to build reputations at their expense? Should not issuers insist that their shares be offered at higher prices and that underwriters simply rely on ex post investor recognition that there were not *negative* returns? Why do issuers not do more to encourage competing underwriters to bid up the price, thereby improving the return to issuers? One might suggest that issuers are not shortchanged because the underpricing of new issues is simply a substitute for direct payments to underwriters. It is doubtful, though, that issuers really need to pay compensation of such magnitude. Moreover, while the average initial performance of new issues is positive, the evidence indicates that any single issue is as likely to be overpriced as underpriced.⁴⁵ It is unlikely that a market would be structured in such a way that some recipients (here, issuers of overpriced stock) receive free services while others pay.

It is also unlikely that underwriters expect to fool investors. Underwriters presumably wish to underprice now in order to overprice later, thus cashing in on their reputations and recouping revenues sacrificed earlier. Gilson and Kraakman, however, do not suggest that underwriters add value to an offering simply by endowing it with their well-regarded seals of approval, for this would not explain the superreturns that become available to investors in new issues. Nor do they claim that underpricing serves an insurance function; this would hardly explain the evidence that any single issue is as likely to be overpriced as underpriced.⁴⁶ But then why should underwriters expect investors to be easily fooled into buying overpriced new issues through mature underwriters seeking to make up for the underpricing of their youth? Again, empirical studies of underwriters may prove wrong any faith in investor ra-

⁴⁵ See Ibbotson, *supra* note 44, at 247 (finding higher likelihood of extremely larger positive than negative performance but unable to reject hypothesis of only even chance of positive initial performance for any single issue).

⁴⁶ An underwriter wishing to avoid litigation by disappointed investors would be more likely to underprice all issues slightly than to overprice.

tionality, but without such studies it is difficult to accept the suggested explanation of underwriter underpricing.⁴⁷

Gilson and Kraakman's hypothesis also leads us to expect the recommenders of *old* issues—stockbrokers—to hold and then sell shares at discounts in order to build *their* reputations. Given a commission system that creates suspicions of “churning” (unnecessary recommendations calling for transactions), brokers might seek to improve their reputations by offering *ex post* superreturns if underpricing in fact profitably creates good will. Yet even mild assumptions about investor or arbitrageur rationality require rejection of this suggestion.

It is difficult, to be sure, to explain the superreturns available to investors in new issues. Several tempting explanations prove ultimately unconvincing. It might, for example, be argued that oversubscribed new issues are rationed in order to facilitate price discrimination in the retail sale of brokerage services. “Good” customers might be enticed with new issues to use an intermediary's services for all of their trading. But this possibility seems remote in the presence of the many underwriters that are not themselves brokers in the secondary market. Moreover, it is unlikely that there are hidden side payments from brokers to underwriters to carry out this scheme. And given that an investment in any single issue is as likely to underperform as outperform the market,⁴⁸ a price discrimination explanation seems weak; an ambitious broker would surely not wish to alienate customers one half of the time. One would expect virtually all new issues to offer milder superreturns under this price discrimination hypothesis, and yet there is no evidence that “good” customers have on file permanent orders to buy new issues.⁴⁹

⁴⁷ In fact, one study shows that the greatest underpricing occurs in initial offerings in which underwriters hold the greatest financial interest, thus casting some doubt on any explanation that assumes a well-functioning market. See J. Blum, *supra* note 44 (describing a sample of offerings in which investment bankers often hold warrants and suggesting that underwriters may underprice in the initial market or “push” the aftermarket of these initial offerings).

⁴⁸ See *supra* note 45 and accompanying text.

⁴⁹ The puzzle might be explained by exploring the potential for collusion, through syndication, among underwriters. One might wonder why issuers do not experiment with a variety of mechanisms to extract bargains from underwriters. As I indicate later in this response, I think there is reason to wonder about the lack of experimentation in this and similar markets. See *infra* text accompanying notes 58-68.

It is worthwhile to explore the costs to an issuer of an underpriced issue and the nature of this new issue puzzle. Imagine a new issue of 1,000,000 shares by Corporation X that would just sell out if priced at \$10 per share. Assume that if offered at \$8 buyers will demand 1,250,000 shares. Given the illegality of stepping up the price,⁵⁰ 250,000 potential shareholders will be disappointed by the \$8 offering of 1,000,000 shares. If the underwriter, in its ignorance of true market conditions, advises that these 1,000,000 shares be offered at \$8, \$2,000,000 that could have been raised for the issuer (by a higher price or by more shares) is lost. Similarly, an ongoing enterprise that brings in new equity owners loses if it underprices a new issue, for it has sold off "partnerships" too cheaply.

What if, on the other hand, the new issue is *overpriced*, say at \$12? Potential investors will want to know the fate of unsold shares, because the fraction of the company represented by each share will depend on the total number of shares sold. If the underwriter has made a firm commitment to sell 1,000,000 shares, intending to buy for its own investment any shares otherwise unsold, investors will know that each share still represents a one-millionth ownership share. Investors will continue to value the whole firm at \$10,000,000 or somewhat more, so each share will still be worth at least \$10.⁵¹ If we further assume that investors do not expect the extra \$2,000,000 to be as well utilized as the first \$10,000,000, the issue, apart from the underwriter's commitment to buy out any remaining shares, will be undersubscribed.⁵² While the number of shares that will be sold to investors at \$12 cannot accurately be assessed, it is fair to assume that *some* shares will be sold. Note, in passing, that this example, which I suspect most observers would find realistic, describes a new issue market in which the demand

⁵⁰ The registrant must announce a price and the number of shares to be sold. Securities Act of 1933, 15 U.S.C. § 77aa (1982). An unexpected change in the price would presumably amount to an actionable misrepresentation. It is, of course, questionable whether extra revenue that redounds to the issuer, as distinct from the underwriter, can be said to have hurt investors, for the extra money will remain in "their" corporation.

⁵¹ We know that 1,000,000 shares priced at \$10 exactly sold out. At \$12, and with the underwriter's firm commitment, investors will almost surely continue to value the firm at (at least) \$10,000,000 (it is the same firm, after all); moreover, the firm has an additional \$2,000,000 that it may put to use.

⁵² If investors do not expect the extra \$2,000,000 to be utilized as efficiently as the first \$10,000,000, they will not value the firm at \$12,000,000. Consequently, not all investors will be willing to pay \$12 for each share.

for shares is not perfectly elastic and in which investors have heterogeneous expectations and preferences.⁵³

In any event, underwriters that offer firm commitments will surely pass along the cost of such promises to issuers.⁵⁴ The issuer's wisest strategy may be therefore to contract for the underwriter's "best efforts" rather than its firm commitment in selling shares. Investors faced with 1,000,000 shares offered at \$12 each will want to know the fate of unsold shares in a best efforts offering. If unsold shares are simply stored as corporate treasury shares, potential investors are uncertain as to the number that will be sold and, therefore, uncertain as to the ownership position represented by each share. The result is a highly unpredictable guessing game (with potential for corruption) in which any number of shares may be purchased. To diminish this uncertainty the issuer and underwriter might agree on an all-or-nothing arrangement, so that if 1,000,000 shares are not sold, all investment money is returned.⁵⁵ Alternatively, as a compromise between reduced uncertainty and potentially wasted transaction costs, underwriters might promise investors that the issue will be called off unless a specified number of shares is sold (say 700,000), with the caveat that other shares (up to 300,000) will also be sold at \$12 if demand materializes.⁵⁶

The cost to the issuer of undersubscription is quite different from that of oversubscription. Imagine, for example, a strategic issuer that guesses correctly that 1,000,000 shares could be sold at \$10, tries to sell the shares at \$12 (promising to alleviate investors' uncertainty by calling the issue off if fewer than 700,000 shares are sold), and actually sells only 700,000 shares (raising \$8,400,000). The cost to the issuer of this undersubscription is now the lower of the cost of obtaining the remaining \$1,600,00 through the next best

⁵³ Note that this argument does not contradict the suggestion made *supra* note 29.

⁵⁴ In the preceding example, *supra* text accompanying notes 50-53, the cost passed along by an underwriter would be the cost of buying for \$12 some shares it values at, perhaps, \$11.

⁵⁵ Presumably transactions costs prevent issuers from trying a series of such all-or-nothing offers beginning with a high price and working down.

⁵⁶ This tactic is, in principal, no different from an offering under the new shelf registration rule. For the text of the new Rule 415, see SEC Securities Act Release No. 6,499, 48 Fed. Reg. 52,896 (1983), reprinted in 1 Fed. Sec. L. Rep. (CCH) ¶ 3,383 (Nov. 17, 1983) (to be codified at 17 C.F.R. § 230.415). In shelf offerings, the issuer registers a given number of shares which it may sell in part or in full, at its option, over a fixed period of time. See Banoff, *Regulatory Subsidies, Efficient Markets, and Shelf Registration: An Analysis of Rule 415*, 70 Va. L. Rev. 135 (1984).

financing arrangement and the opportunity cost of foregoing the least attractive projects among those that would have been financed by the full \$10,000,000. Thus, an enterprise might establish a line of credit with a commercial lender as a backup to its new equity issue. Alternatively, the \$10,000,000 goal might be achieved by generating a second equity issue (at a price less than \$12). The expense of such a step, however, includes the additional disclosure and other transaction costs involved.⁵⁷

I have no data to offer on these costs, but my intuition is that if opportunity costs of oversubscriptions are properly measured, then underpricing is, generally speaking, much less attractive than overpricing. Frequent overpricing would be easy to explain; put in a more familiar context, retail stores overprice daily in the sense that they maintain inventories and await high-paying customers. Underpricing by a retailer, however, would be quite a puzzle.

One solution to the puzzle may be that underwriters simply do not bid vigorously for a potential issuer's business. Although I explore below the pricing decisions of a seller unfamiliar with a particular market, it is useful to note at this point that underwriters' bids for an issuer's business may not yield the market price (minus distribution and risk costs) to issuers. A bidding underwriter faces substantial search costs in evaluating either the "true worth" of the enterprise, as it will reveal itself over time, or the way in which equally ignorant investors will value the enterprise (or one another's intuitions) and purchase shares from the underwriter who bids highest. It is quite likely that no single underwriter will expend sufficient resources to uncover such information. Many underwriters will, no doubt, study the issuer in question very little. The result will be safe bids that are substantially higher than those that would be submitted by competitive bidders that had actively searched and studied the situation. This disinclination to expend search costs—to the ultimate detriment of the party (here, the issuer) accepting bids—is a common problem in auction theory. The

⁵⁷ Once again, an underwriter that offers a firm commitment to the issuer directly bears the cost of the undersubscription and surely will pass this risk on to its client. This cost shifting will almost certainly be in the form of underpricing, but I do not stress this tendency here. Instead, I focus on the joint venture (i.e., the relationship between the issuer and underwriter) that seeks investors' funds and then compare underpricing and overpricing costs.

seller might have more success with a "second-price auction"⁵⁸ or some other device to encourage brave bids; but again, one cannot simply assume that issuers receive highly competitive bids and are not, therefore, on the losing end of the new issue puzzle.⁵⁹

Gilson and Kraakman note an illuminating analogue to the new issue market: the residential real estate market in which sellers-brokers-buyers resemble issuers-underwriters-investors.⁶⁰ As both of these market arrangements involve the sale of a good about which the seller may have little knowledge (either directly or by comparison with sales of similar goods), it is useful to examine the seller-real estate broker-buyer arrangement.⁶¹ The goal of such an examination is not to explain existing practices but to suggest that when pricing decisions are difficult and infrequent, and auctions are unattractive, these decisions are often made poorly. There may be little (if any) experimentation with alternative price-setting processes, because such alternatives are difficult to evaluate even *ex post* and, possibly, because the rewards for successful innovation are meager.⁶²

How should a potential seller sell his house? Imagine that houses in a neighborhood have sold in the range of \$70,000 to \$120,000. If the seller asks \$90,000 and the house sells in a week, uncertainty may develop as to whether the house might have been marketable at a higher price.⁶³ Ironically, there may be a "homeowners' puz-

⁵⁸ See Vickrey, *Counterspeculation, Auctions, and Competitive Sealed Tenders*, 16 *J. Fin.* 8, 20-23 (1961).

⁵⁹ The emergence of "Dutch auctions," in which the offering price of a new issue is the highest price bid by an underwriter for the bloc being offered, may eventually demonstrate that the problem in this market is either anticompetitive behavior among underwriters or unimaginative issuers, rather than the search costs just described. Perhaps issuers' expectations are now being satisfied so that they do not shop more actively or otherwise innovate. Alternatively, underwriters may not seek to outbid one another because of fears that the underwriter with an already established relationship with the issuer will simply match or outbid any newcomer. One would expect underwriters who first contact new issuers to demand some guarantee that the deal will be theirs before undertaking an investigation of the issuer, both for strategic (i.e., marketing and pricing) and legal (due diligence) purposes. In this way, underwriters are somewhat established and in place before a formal underwriting agreement has been executed.

⁶⁰ Gilson & Kraakman, *supra* note 1, at 643 n.247.

⁶¹ Because residences are rarely homogeneous, there is little point in asking whether the market is efficient.

⁶² Successful innovation can be copied at no cost.

⁶³ Of course, the seller would not care unless the house could have been sold quickly enough that his annoyance, interest, and other costs would be more than offset by the

zle" somewhat like the issuers' puzzle discussed above; many sellers express enormous pleasure at quick sales and seem to give no thought to the missed opportunity of a higher-priced sale.

Presumably there is a cost to a seller's asking too high a price at the outset. The high signal may discourage potential buyers from inspecting the house and from bidding at all. A standard, or progressive, auction offers the welcome possibility that buyers' bids will exceed the seller's expectations. An auction presents the danger, however, that buyers will not undertake search costs because of the low probability that any one bid will escape freeriding by other bidders and will ultimately prevail.⁶⁴ It is useless to suggest that buyers' searches be subsidized by the seller who wants to encourage aggressive bidding because any subsidy—e.g., one promising bidders who come within \$15,000 of the high bid \$200 for their trouble—is open to abuse by a bidder who plans to bid \$X and can tell friends to put in bids \$100 below \$X.

Strategic behavior defeats yet another seller option. A seller may ask a low price, say \$75,000, but announce that, instead of immediately accepting a contract at that price, he will advertise the bid and allow twenty days for other potential buyers to offer more. Each successive buyer will also be given the twenty day condition. In this manner, potential buyers are given encouraging signals, in the form of other bids, that the house is "worth" (to someone) at least the amount bid. But this scheme fails to fulfill its promise because potential buyers cannot trust the signals that the seller transmits. A seller might advertise that a bid of \$115,000 has been received, but other bidders cannot be sure that the bid is not homemade.

The employment of a real estate broker as an intermediary does not solve the seller's pricing problem. Certainly, the broker may be a better judge of market conditions than the seller, just as an underwriter may have more information than most issuers. Part of the broker's function, after all, is that of a marketing expert (similar to the underwriter's role, in part, as a distributor)—not a judge

higher price.

⁶⁴ See *supra* text preceding note 58. This problem is particularly acute when the seller's property is unremarkable and thus does not encourage multiple inspections in the first instance. When a house is not inspected it may, of course, be regarded as a "lemon" in the marketplace.

of value.⁶⁵ Furthermore, the broker may outperform the seller at describing, advertising, and touring the residence. He may not, however, necessarily outperform the seller at choosing the "correct" price.

In fact, the prevailing commission scheme, in which the seller's agent typically receives six percent of the ultimate sales price (and shares this with the buyer's agent, if any) creates an incentive system most unlikely to encourage good pricing advice. The agent's interest would more closely resemble the seller's if there were no commission up to a threshold amount (\$70,000 in the above example) and a higher, perhaps thirty percent, commission on amounts closer to the margin (over \$80,000 for example). Moreover, if price-setting is an important part of the agent's work, it is mystifying that the buyer's agent would share equally in commissions.

Consider further the incentives facing the potential buyer and his agent. If a seller offers a residence without an agent (for sale by owner, or FSBO), the buyer's agent will see no commission in which to share. The agent may well avoid such properties, for there is no regular market arrangement for compensating the buyer's agent even on a *quantum meruit*, or "fairness," basis, if a FSBO is purchased. Nor is there compensation for the buyer's agent who shows a great number of properties only to find the client later switching agents when just the right property comes on the market.⁶⁶ Finally, consider the buyer who searches without an agent and decides on a property that is being sold through an agent. The sale price "contains" a commission, so the buyer has every incentive to bring on an agent (possibly a friend who may or may not share the spoils with the buyer) who, with no additional effort, may collect one-half of the selling agent's commission. A market arrangement under which the seller's agent receives a higher marginal rate⁶⁷ and the buyer's agent is reimbursed by the hour or by

⁶⁵ I find the fact that real estate brokers do not serve as reputational intermediaries, or even as bonding agents (by promising buyers protection against defects or misrepresentations), more curious than do Gilson and Kraakman. Gilson & Kraakman, *supra* note 1, at 643 n.247. Strangely enough, sellers would never knowingly go to agents who had reputations among buyers for selling below their expectations, but new issuers readily deal with underwriters that are described in the literature as having underpriced new issues to gain for themselves buyer goodwill.

⁶⁶ One wonders why there are no hourly compensation schemes in this particular market.

⁶⁷ See *supra* text preceding note 65.

the project would be much easier to understand.⁶⁸ Similarly, an issuer-underwriter arrangement that provides rewards to the underwriter that correctly predicted the price of the stock in the secondary market or that otherwise provided accurate pricing advice (or even mild overpricing advice) seems more sensible than the present system. Such incentives would seem far more potent than those that currently exist in the new-issues market, where an underwriter hopes for future compensation in the form of patronage of investment banking services from a client who is pleased by the underwriter's assistance with the current deal.

In any event, it is no accident that substantial and similar puzzles exist in both the new securities issue and real estate markets. Both concern the sale of a black box. Both contain intermediaries whose rewards are unrelated or perversely related to any price-setting role they may play. These features are also present in other markets with agents, such as law firms and advertising agencies, that are difficult to motivate through contractual design. The presence of contingency fees and contracts in the market for legal services serves more to provide an obvious link between lawyering and underwriting and brokering than to signal a well-working market.⁶⁹ But these are subjects beyond the scope of this symposium.

III. CONCLUSION

Economists are quick to assume, in the absence of collusion or other market imperfections, that prevailing economic arrangements are sensible and, at times, ingenious. Lawyers tend either to ignore the functions of these arrangements or to look for opportunistic behavior and the potential for judicial and legislative intervention. While I am often sympathetic with both methodologies, there are settings in which, I think, existing arrangements are unimpressive and adequate mechanisms and incentives for experimenting with other arrangements may be lacking. Legal rules—such as those that impose costs on an issuer wishing to float

⁶⁸ There are rare examples of negotiations between agent and seller that yield more "sensible" compensation arrangements. It is the infrequency of such arrangements that is puzzling.

⁶⁹ A typical contingency fee is a straight percentage of the plaintiff-client's recovery. But often the first \$X of recovery is almost a sure thing, leading one to wonder why we don't see contracts calling for a greater percentage over \$X than below \$X.

exploratory shares—may even discourage experimentation or obscure the nature of the prevailing arrangements. In any event, the puzzling intermediaries that are found in these black box markets (new issues and real estate) are especially wondrous only if we assume that they serve not only a sales function but also a price-setting function. The various forms of compensation that they receive are then, indeed, quite puzzling. But if optimal price-setting is sometimes so difficult that there is little reason to think that intermediaries such as underwriters and real estate brokers can do better than the rest of us, then the remaining puzzle concerns these industries' unimaginative, tradition-bound practices. I have tried to suggest in this response that we focus on the agency problems and the contractual relationships within the securities industry and other industries with similar characteristics, and on the law's posture toward institutional arrangements in these industries. Legal scholars might well wonder whether the law's conservatism contributes to such puzzling arrangements, and they certainly ought to consider whether freerider problems or other imperfections in the information-acquiring processes are important and correctable. In any event, these sorts of questions about institutional and contractual arrangements are surely as interesting and important as the fact or illusion of market efficiency. What difference really if the market reflects all that can be known and that is worth knowing? We may know very little and be disinclined to know more.

